

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
3 April 2003 (03.04.2003)

PCT

(10) International Publication Number  
**WO 03/026995 A2**

(51) International Patent Classification<sup>7</sup>: **B65H 75/00**

(21) International Application Number: PCT/GB02/03982

(22) International Filing Date: 30 August 2002 (30.08.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0123081.2 26 September 2001 (26.09.2001) GB  
0204691.0 28 February 2002 (28.02.2002) GB

(71) Applicant and

(72) Inventor: **HARTLEY, Brian** [GB/GB]; 12 Oakley Avenue, Brokwell, Chesterfield, Derbyshire S40 4DS (GB).

(74) Agent: **PARNHAM, Kevin**; Swindell & Pearson, 48 Friar Gate, Derby DE1 1GY (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

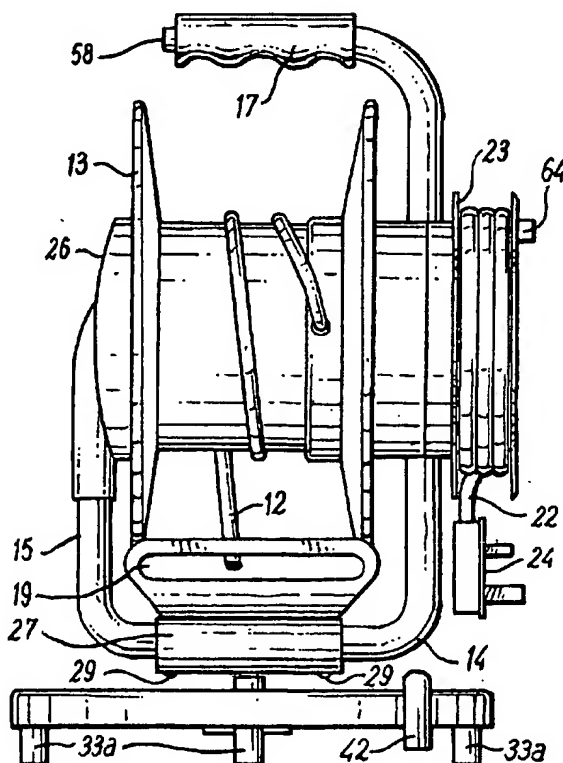
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: COMBINATION CABLE REEL



(57) Abstract: A cable reel arrangement is provided in which the reel arrangement includes a rotatable member to accommodate a drum for a main elongate member. The rotatable member being driven by drive means such as an electric motor or when the electric motor is not operational may be manually turned in order to wind and unwind the main elongate member. The reel arrangement also including a tail elongate member for coupling to a supply for the main elongate member such as main water or electricity supply. Electrical power to drive the electric motor may be tapped from the elongate member when an electrical cable.

WO 03/026995 A2



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

### Combination Cable Reel

This invention relates to reels for elongate members in particularly, but not exclusively, to reels for electric cable or hose piping.

Several types of reel have been proposed, particularly for extension cables. A simple version consists of a drum with cable wound round it, the cable having a plug head fitted to one end and a socket, or sockets, to the other end and the cable being manually wound onto the drum when not in use. Alternative to this is where a spring or electric motor is used. Some of the methods used can result in the appliance being heavy to handle. They also could be improved both on safety grounds and lack features that could allow them to be more versatile where several reels may be required, for example an electrical supply may be required by people working on the top of a ladder or scaffolding, whilst a further supply is required at ground level.

Hose reels are a means of conveying water from a tap. Reels are frequently used to water gardens. They can also be used to supply water to extinguish a fire and many other uses.

Hose reels are well known, and versions of them consist of a reel which has to be manually wound onto a drum, alternatively, versions are available which use a spring to rewind the hose pipe onto the drum. These tend to be inconvenient as they can require the operator to keep tension on the hose, also the length of the spring return limits the extent of the hose that can be rewound.

Particularly with respect to electric cable reels there are constraints with respect to the allowed electrical power or amperage dependant upon the length of wound cable still held on the reel. Thus, the acceptable amperage to be presented at the far end of an elongate member is significantly lower when only a small length of electrical cable has been unwound in comparison with a longer length. Typically, a reel arrangement is graded so that an electrical current or

Amps value is set at a limit for the electrical cable at differing wound or unwound lengths. This can be inconvenient particularly when only short lengths of electrical cable must be unwound.

This invention seeks to provide an improved reel with a combination of more versatility and better safety features.

In accordance with the invention there is provided a reel arrangement comprising a rotatable member onto which a main elongate member can be wound and from which it can be unwound, and support means on which the rotatable member is mounted, the arrangement further comprises drive means by an electric motor or manual drive, the rotatable member being turned by the electric motor when a switch is operated, or manually when not.

Alternatively, in accordance with the present invention there is provided a reel arrangement comprising a rotatable member upon which a main elongate member can be wound and unwound, the rotatable member being associated with drive means whereby the rotatable member can be turned by the drive means, the drive means comprising an electric motor but configured to allow the rotatable member to be manually turned when the electric motor is not operated, the arrangement also including a tail elongate member associated with the main elongate member for supply thereto and/or to the electric motor.

Also, in accordance with the present invention there is provided a reel arrangement comprising a rotatable member upon which a main elongate member can be wound and unwound, a tail elongate member secured to the arrangement to allow limited movement of the arrangement in use from a power source and connected to electrical power coupling means incorporated in the reel arrangement whereby the acceptable value of electrical power that can be supplied to the power coupling means is not limited by the extent to which the main elongate member is wound or unwound upon the rotatable member.

Preferably, the drive means comprises the electric motor and a gear box controlled by a suitably placed switch. The speed of the motor can be

controlled by a rheostat or other suitable apparatus, this will govern the speed of the drum onto which the main elongate member is wound.

When the electric motor is attached the interfitting portions cooperate, thereby providing a mechanical and/or electrical connection between the drive means and the rotatable member. The main elongate member is preferably a power cable, the interfitting portions comprising electrical contacts operable to tap power from the cable to provide power to the drive means. Preferably the support means comprising a hub by which the rotatable member is supported for rotation. The hub may comprise a chamber for receiving the drive means when the drive means is present, and may also comprise of a longer spindle to support the drum at both sides, and a small knob to turn the drum manually.

The support means may comprise a frame member which extends downwards from a handle and underneath a rotatable member, here it is connected to a second support member which extends downwards from the hub, this support member carries an electric motor which is fitted inside the hub of the rotatable member. The handle may contain a switch when the electric motor is present. The two support members are made of tubular steel and are connected by a steel bar which has been drilled off centre throughout its length. A pin is screwed into this to support the structure and allow it to spin on a base, with an interlocking feature present.

When the electric motor is not fitted the device may be supported on only one side and no switch fitted in the handle.

The rotatable member and other parts of the structure are made of non-conductive material where they support electrical cable or contacts. To one side of the rotatable member near to where the handle section meets the centre a set of rotary contacts is assembled on a circular board that is fixed to the rotatable member, on the same side is fixed an insulated moulding to allow the cable that connects the reel to the mains electricity supply to be wound around when not in use. To the centre of this moulding is fixed a number of electrical sockets to which plug heads from electrical appliances can be attached when required for

use. The mains connection cable and the cable connected to the sockets is also connected to three pins which are situated so that they engage with the rotary contacts which are connected to the cable on the rotary member.

Preferably the support means for the reel comprises a base which can be of various shapes, the one shown is circular. In the centre is a hole, this serves as a locating and support means for a pin on which the reel is mounted. The tubular frame of the reel is fixed together at the bottom by a piece of bar that has been drilled to accept the two parts, the bar and tubing are drilled and screws placed through them to fix the structure together. The bar also has a hole drilled and threaded to accept the support pin.

When the pin is placed in the hole on the base a locating bar which can be moved and operated by a spring, engages in a groove which has been machine cut into the support pin. The reel can still swivel in the direction that the operator requires when the cable is pulled by the operator as it passes through the eye of a shaped guide attached near the base of the reel. The guide helps to distribute the cable more evenly when it is being rewound onto the drum.

The pin member can be arranged to be ground supported on a socket placed in the ground, or bracket mounted on a wall. A variation of the reel can also be fitted onto a trolley arrangement which would be very useful for industrial purposes where a long length of cable may be required, and a means to control the speed of the electric motor when rewinding the cable. A variation of the reel can be used for this purpose whereby a plug head is fitted onto the elongate cable extending from the drum and the separate length of cable around the socket arrangement discarded. A small socket which is connected to the switch in the handle could be fitted near to the sockets in the moulding and this connected by a plug and a wire to a switch on the handle of the trolley. The switch could also contain a rheostat to control the speed of the electric motor. The operator would have to walk towards the electrical supply when the reel is attached whilst operating the switch on the trolley.

Preferably, the reel arrangement can be mounted on a stand, a wall bracket, or a stake in the ground. The reel can be attached to all of them using a central pin to allow it to rotate up to 360°.

The electrical power required to drive the electric motor could be supplied through a cable connected from the electric motor to the mains electricity, or by connecting it to a battery or generator.

A suitable handle can be positioned to steer the main elongate member onto the drum together with a guide when it is rewound.

Possibly, the main elongate member is a hose. The hose connected to the main water supply is connected to a coupling that can swivel but not leak, which is situated at the centre of the drum to allow the hose on the drum to turn with it. A bracket is fitted to one side of the coupling and the frame on which the reel is supported. The bracket could be made to be detached if required to allow the reel to be manually rewound if, for instance, the electrical supply failed for any reason.

The mechanism used to turn the drum on the reel could also be adapted to rewind electric cable onto the drum using the same switch and electric motor mechanism and a set of rotary contacts, to allow a suitable connection between the main electricity supply and the cable on the drum.

One other embodiment fitted to the reel near to the socket on the cable extending from the drum is a safety device to isolate the electrical supply to the socket. The operator can use this to switch the electrical supply OFF if they are called away for any reason, and to stop small children from activating any machinery that may be connected to the socket. A rocker switch is mounted in a box, and a hole in the side of the box allows only an adult finger to reach the switch and switch it to the ON position. A knob mounted on a spring operated rod is fixed so that when the knob is pressed it operates the rocker switch and places it in the OFF position.

Embodiments of the present invention will now be described in more detail by way of example only, and with reference to the accompanying drawings in which:-

Fig. 1 and 2 are side and frontal views of a reel according to the present invention.

Fig. 3, is a split drawing showing parts of the reel in Fig. 1 and 2.

Fig. 4, 5 and 6, show the underside of the base and the mechanism that locks the pin on the reel.

Fig. 7 and 8 show a side view of the trolley with a reel fitted on it, and also a view from the rear.

Fig. 9, is an isometric view of the reel in Fig. 1 and 2 but with the addition of the safety switch box.

Fig. 10, is an isometric view of an electric motor driven reel using cable on the rotatable drum to supply electrical power to the sockets.

Fig. 11, is a split drawing of the reel for manual operation.

Fig. 12 and 13, show various fixings for the reel;

Fig. 14 shows a reel in accordance with the present invention used for a hose;

Fig. 15 shows a front view of the reel depicted in Fig. 14; and,

Fig. 16 shows details of drum fixings for the reel depicted in Figs. 14 and 15.

Figs 1 to 13 of the drawings show a reel arrangement, 10, for a main



elongate member such as an electric cable, 12. The reel, 10, comprises a rotatable drum, 13, onto which the cable may be wound, and from which it may be unwound. A support arrangement is generally shown at 14 and 15. The drum 13 is mounted on support 14 at one end and a motor housing, 26, attached to the support 15 at the other. Drive means is by an electric motor (unless as will be explained later it is manually operated).

In more detail, the reel 13 comprises a support column, 14, which extends upwards at one side to support the drum, 13, and then rises further to form a handle, 17. The other side of the drum is supported on the motor housing, 26, and the support column, 15, allowing the drum to rotate in a horizontal axis within the space between a cable guide member, 18, and a handle, 17. Rotation of the drum, 13, in this manner allows the cable, 12, or other elongate member to be wound onto the drum, 13, or unwound from the drum 13. The cable, 12, is threaded through an eye, 19, onto the drum, 13, during winding and unwinding. In one example one end of the cable, 12, carries a box, 20, with an integral switch, and a socket, 21, on the end. The other end of cable, 12, passes through a hole, 12a, and is connected to a set of rotary contacts and is then connected to a tail cable, 22, which is wrapped around a moulded section, 23, to support it when not in use. On the end of the cable, 22, a plug head, 24, is fitted. The cable, 12, can then be used as an extension to carry electricity to where the operator requires it, which may be some distance away. The tail cable end, 22, can be unwrapped and connected to a suitable mains electrical socket. The moulded section, 23, also carries two electrical sockets, 25, for the operator to use a further supply of electricity that may be required adjacent or nearer to where the reel, 10, is standing.

By provision of sockets 25 it will be understood that electrical power can be drawn from the reel arrangement at locations within the displacement range of the tail cable 22. The allowable electrical power through the sockets 25 will be significantly greater than the allowable electrical power deliverable through socket 21 when only a similar amount of cable 12 has been dispensed. In such circumstances, the present reel arrangement is significantly more convenient in allowing greater amperage or electrical current throughput when only a small

extension from the power socket to which plug head 24 is connected in comparison with previous systems limited by the unwound cable retained on the reel 10 causing cable heating and other problems.

Figs. 1 and 2 show the two reel supports, 14 and 15, which are made of tubular steel, connected together at the bottom by a bar, 27, this has been drilled off centre to allow one side to be thicker, this is to allow a threaded hole to be presented in order to accept a pin, 28, which is threaded at one end. The bar, 27, is also drilled through for two screws, 29, to fix the supports, 14 and 15, to the bar. The pin, 28, is tapered at an end 30, and it also has a groove, 31, cut into it. The pin 28 is tapered at the end 30 to allow it to enter a socket, 32, which is attached to a base, 33. The groove, 31, allows the base, 33, to become locked in position by a spring, 40, and a bar, 34, (shown in Fig. 4) (Figs. 5 and 6 shows the bar 34 in larger section). An end, 35, of the bar, 34, enters the groove, 31, on pin, 28, because the bar, 34, is shaped at the end to fit the radius of the pin, travel on the bar, 34, is controlled by two slots, 36 and 37, as the bar 34 slides between the base 33 and two screws, 38 and 39, a spring 40 is fitted to the bar at one end and the base, 33, at the other, this forces it to act in the direction of arrow, 41. The end, 42, of the bar, 34, is bent up to allow the reel, 10, to be removed from the base, 33, when it is lifted away from it, and the bar, 34, disengages from the pin, 28, when the bar is pulled against the spring. When the pin, 28 is locked in position by the bar, 34, the reel, 10, can still spin around on its axis.

Fig. 3 illustrates the parts of the reel described in Figs. 1 and 2 in more detail.

The drum, 13, has a central hub, 42, around which the cable, 12, or main elongate member can be wound or coiled, to be held between radially extending walls, 43. Bearing arrangements between the hub, 42, are arranged between an insulated plate, 44, which is screwed to one side of the hub 42. The insulated plate, 44, has a hole, 45, and this acts as a bearing when spindle 46 is passed through a circular insulated plate, 47, and into the hole, 45.

The circular insulated plate, 47, is fitted with three pins which make contact with three rotary contacts which are fitted to the insulated plate 44. The opposite side of the hub, 42, is supported by a flange, 48, on the motor housing, 26, which acts as a bearing to support the drum, 13. An electric motor with combined gearbox, 49, is fixed to the motor housing, 26, by two screws, 50, which are fitted between the motor housing 26 and the non-drive end of the electric motor. When the electric motor is fitted inside the hub, 42, a square drive member, 51, which is fitted on the drive shaft, 52, and is held in position by a grub screw, 53, is fitted inside a square hole, 54, in the insulated plate, 44. The two support members 14, and 15, are fixed near to the base of the reel, 10, by the drilled bar, 27, and held in position by two screws, 29. The cable guide, 18, is also screwed to the drilled bar, 27, through holes 55 and 56.

Wiring to a switch 58 passes through a hole, 57, in the support, 14, and then it is connected to the switch, 58, which is then pushed into the end of the handle, 17. The wiring to the electric motor, 49, passes through hole 59 in the support, 14, and through the hole in the bar, 27, it then passes through support, 15, and a channel, 60, in the motor housing, 26, where it is connected to the electric motor, 49. The inner end of the cable, 22, (Fig. 2) is wrapped around the moulded section, 23, and passes through a hole near the centre, the outer end has a plug head, 24 fixed on it. When the plug head 24 is fixed to a mains electricity supply the cable acts as the supply to the various connectors.

A small socket, 64, is fixed to the plate containing the two sockets, 25, and this is connected to the switch 58 wiring that controls the electric motor, 49. A plug 65, Fig. 7, is fitted to the socket, 64, when the reel is placed on a trolley, 66, Fig. 7. All the connections are made to the various components using connectors (not shown) which are situated between the insulated plate, 47, and the moulded section, 23. The plate holding the sockets, 25, is then placed in position and fixed with screws 62.

Figs. 4, 5 and 6 show the base in more detail.

Fig. 4, shows the base, 33, from the underside and the four rubber feet,

33a, on which it stands. A socket, 32, is assembled in the centre, and the bar, 34, which is allowed to slide across the base, 33, but is governed by the amount of movement by two screws, 38 and 39, which are fixed to the base, 33, but the bar, 34, can only move a short distance because of two slots, 36 and 37, through which the screws, 38 and 39, are fitted. Fig. 6 shows the bar, 34, which is bent to allow the spring, 40, to be fitted between the metal bar and the base, 33, at one end the spring, 40 is fixed to the base 33, and at the other end it is fitted through the slot, 36, Fig. 5 and the spring 40 acts to pull the bar in the direction of the arrow, 41. Two spacers, 38a and 39a, are fitted to allow the bar, 34, free movement.

Figs. 7 and 8 are views of the trolley.

Fig. 7, shows the trolley frame, 66, which is made of tubular steel, the base of which is fitted with two wheels, 67 and 68. At the front of the trolley are fitted two rubber feet, 69, which are pushed onto the frame of the trolley. Along the base of the trolley is fixed a plate, 70, which runs between the two sections that extend towards the rubber feet, 69. Fixed to the plate, 70, is a socket, 71, and this accepts the pin, 28, of the reel, 10, when it is placed in it. A plug, 65, which is connected to a switch with a rheostat, 72, by a cable, 73, is connected to the socket, 64, on the reel. The switch, 72, is operated by a lever, 74, when the operator pulls it, the cable on the reel is connected by the plug-head, 24, to the mains electricity supply and if the cable on the reel is extended the electric motor, 49, Fig. 6, will become energised and the reel will rewind the cable, 12, Fig. 1. The trolley, 66, can be manoeuvred around by leaning it backwards using the two hand grips, 74 and 75, the rubber feet, 69, will then be off the ground. The trolley 66 is moved towards the cable unwound or "played out" from the reel 10. If it is required to stop the reel, 10, from turning on the pin, 28, at its base, the drum can be kept central by the use of two stabilisers, 76 and 77. These are fitted around the metal frame of the trolley, 66, the stabilisers are adjustable to move inwards so that they gently press on either side of the drum walls, 43. An adjusting screw, 78, is fitted to each stabiliser, these can be slackened and re-tightened when the correct adjustment is reached.

Fig. 9, is an isometric view of the reel.

The reel shown in Fig. 9, has the same parts as that shown in Figs. 1 and 2, except for the addition of a safety switch box 20. This is fitted onto the cable, 12, and the live wire to the socket, 21, is first connected to an ON/OFF rocker switch that is fitted inside the box. The switch can only be operated by an adult finger which has to be placed inside the hole, 20a, in the side of the box. On the top of the box is a spring operated rod (not shown) with a knob, 21a, mounted on it. When the knob 21a is pressed down this isolates the live electricity from reaching the socket, 21, as the rod operates the switch.

Fig. 10, isometric view of a reel variation.

The reel shown in Fig. 10, differs from that shown in earlier Figs. 1 to 9. The cable on the drum, 13, is used to reach the mains electrical supply using plug head, 79. The electricity passes through cable, 80, and through the reel to a set of rotary contacts, it is then connected to the two sockets on the side, 81. When the operator requires to rewind any cable that has been unwound, they must walk towards the power supply whilst pressing the switch, 58. The mechanical layout of the reel is basically the same in other respects to that shown in Fig. 1 and Fig. 2. The reel can be mounted on the trolley shown in Figs. 7 and 8, and connected through the socket, 64, the operator would have to manoeuvre the trolley towards the power supply whilst pressing the lever, 74, on the trolley, Fig 8, when rewinding the cable, 80.

Fig. 11, shows a split drawing of the reel which has to be manually operated.

The main spindle, 82, is longer to support both sides of the drum, 13, many of the other parts remain the same as the reel shown in Figs. 1 and 2. There is no electric motor, 49, or motor housing, or support, 15, and no wiring to a switch or electric motor.

One end of the drum, 13 has a blanking plate, 83, fitted to the end of the spindle, 82, using a screw, 84, which is screwed into the end, 85, of the spindle, 82, when the circular insulated plate, 47, and insulated plate, 44, have first been fitted onto the spindle. A knob, 86, is fitted on the side of the drum, 13, to rewind the cable onto the drum, 13. The moulded section, 23, is then fixed to the circular insulated plate, 47, and the socket plate, 25, fitted using screws, 62. The cable wrapped around moulded section, 23, and the drum, 13, is connected in the same manner as Figs. 1 and 2.

Figs. 12 and 13, show alternative fixings for the reel, 10.

Fig. 12, shows a bracket, 87, which has two screw holes, 88 and 89, to mount it on a wall. On one end of the bracket a socket, 90, is fixed, and this allows the reel, 10, to be wall mounted, and allow it to swivel.

Fig. 13, shows a pin, 91, which can be knocked into the ground to support reel, 10, it has a socket, 92, on the upper end of which the reel can swivel.

The reel arrangement 110, shown in Fig. 14 shows a motorised drum 111 to accept a water hose 112 as a main elongate member. The drum 111 is powered by an electric motor 113, which drives a gearbox connected to it (not shown). The motor 113 is fitted inside an outer casing 114, the drive spindle 115, fits through the drum 111, and is held in place by a washer 116, Fig. 16, which is fitted over the spindle 115 as it protrudes through the inner boss 117, of the drum 111. A nut 118 is then screwed onto an end of the drive spindle 115, Fig. 4 and secures the drum 111 as it tightens onto the protruding section 119 of the drive spindle 115. The electric motor 113, is controlled by a rod 120, which passes through the centre of a handle 121. The rod 120 has a button 122 fixed to it. To secure the rod 120 in place when it is fitted inside the handle a collar 123 is screwed into an end of the handle 121. The end of the rod 120, operates a micro-switch 124, which is connected to the motor 113, using the normally open contacts of the micro-switch 124 and a mains electricity supply, which is supplied via a connection block 125, a cable 126, and plug head 127.

Other wires from the motor 113 are connected to the connection block 125. When the button 122 is pressed to operate the motor 113, the drum 111 rotates and winds the water hose 112 onto it. This is because the hose 112 is connected to the drum 111, using a shaped tube 128, which fits through a hole 129 in the drum 111. One end of the hose 112 which is wrapped around the drum 111 is connected to the shaped tube 128 and secured by a clip 130. The other end of the shaped tube 128 is threaded and this passes through a plate 131 and is screwed into a connector 132. The plate 131 is then screwed to the drum 111, using three holes formed in it for this purpose. The plate 131, is then trapped between the shaped tube 128, and the connector 132, so that they all turn with the drum 111, when it revolves. Another type of connector 133, has an L shaped piece of metal tubing 134, attached to it, and this is pushed onto the outer end of the connector 132, the bottom end of the tube 134, is also pushed onto a protruding boss 135, and this stops the connector 133 turning with the drum 111 when it revolves. An 'O' ring 136, which is fitted on the connector 132 seals the joint and stops any leaks occurring when the hose 137 or tail elongate member, which is connected to the connector 133, and the mains water supply. To guide the hose 112, onto the drum 111, it passes through a shaped section 138, Fig. 15. This is fitted onto the end of a piece of tube 139, Fig. 14. The other end is fixed to the bottom of another tube 140. The bottom of the tube 140, is supported by a pin 141, which is screwed into it. The pin 141 then fits into a hole in the top of a stand 142, so that the whole device 110, can revolve 360°. A wall bracket could replace the stand, or a piece of tube fitted in the garden to allow the device 110 to revolve on them also. A cover 143 fits over the frame 14, and is fixed using nine screws 144. When not in use the cable 126 can be wound around the two pieces 145, which are attached to the cover 143. When operating button 122, is pressed the electric motor 113, is energised to turn in one direction only, this is to rewind the hose 112, onto the drum 111. The electric motor 113 is powered by mains electricity through cable 126 and plug 127 connected to a power socket (not shown). The hose 112 has to be pulled out manually to where it is to be used. Should the electricity power supply fail for any reason, then the drum 113 can be turned manually, this can be done by removing the section of tube 134, which will detach it from parts 135 and 132, a knob 146, on the side of the drum 111, can

be used for this purpose.

Whilst the above reel arrangement mainly deals with aspects of a hose reel, the system could easily be adapted to be used to rewind a compressed air hose or electric cable.

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance, it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.



Claims

1. A reel arrangement comprising a rotatable member onto which an elongate member can be wound and from which it can be unwound, and support means on which the rotatable member is mounted, the arrangement further comprises drive means by an electric motor or manual drive, the rotatable member being turned by the electric motor when operated or manually when not.
2. A reel arrangement comprising a rotatable member upon which a main elongate member can be wound and unwound, the rotatable member being associated with drive means whereby the rotatable member can be turned by the drive means, the drive means comprising an electric motor configured to allow the rotatable member to be manually turned when the electric motor is not operated, the arrangement also including a tail elongate member associated with the main elongate member for supply thereto and/or to the electric motor when the main elongate member is in electrical cable.
3. An arrangement as claimed in claim 1 or claim 2 wherein the drive means comprises the electric motor and a gear box controlled by a suitably placed switch.
4. An arrangement as claimed in any of claims 1,2 or 3 wherein the speed of the electric motor is controlled by a rheostat or other suitable apparatus, such control, of the speed of the electric motor is used to govern the rotational speed of the rotatable member upon which the main elongate member is wound.
5. An arrangement as claimed in any preceding claim wherein when the electric motor is operated, the interfitting portions co-operate thereby providing a mechanical and/or electrical connection between the drive means and the rotatable member.

6. An arrangement as claimed in any preceding claim wherein when the electric motor is operated, the interfitting portions co-operate thereby providing a mechanical and/or electrical connection between the drive means and the rotatable member.

7. An arrangement as claimed in claim 6 wherein the elongate member is a power cable, the interfitting portions comprising electrical contacts operable to tap power from the cable to provide power to the drive means.

8. An arrangement as claimed in claim 1 or any claim dependant thereon wherein support means comprises a hub by which the rotatable member is supported for rotation.

9. An arrangement as claimed in claim 8 wherein the hub comprises a chamber for receiving the drive means when the drive means is present.

10. An arrangement as claimed in claim 9 wherein the hub comprises a spindle to support a drum secured to the rotatable member at both sides and a knob is provided to allow the drum to be turned manually.

11. An arrangement as claimed in claim 1 and any claim dependant thereon wherein the support means comprises a frame member which extends downwards from a handle and underneath the rotatable member, the frame member is connected to a second support member which extends downwards from the hub, this second support member carries an electric motor which is fitted inside a hub of the rotatable member.

12. An arrangement as claimed in claim 11 wherein the handle contains a switch by which the electric motor is operated.

13. An arrangement as claimed in claim 11 or 12 wherein the frame member and the second support member are made of tubular steel and are connected by a steel bar which is drilled off-centre through its length.

14. An arrangement as claimed in claim 11 wherein a pin is secured to the steel bar to support the structure and allow it to spin on a base such that there is an interlock presented therebetween.
15. An arrangement as claimed in any preceding claim wherein when the electric motor is removed the rotatable member and elongate member are supported on one side only and any electrical switch removed.
16. An arrangement as claimed in any preceding claim wherein the rotatable member and other parts of the arrangement are made of non-conductive material.
17. An arrangement as claimed in any preceding claim wherein one side of the rotatable member includes rotary contacts to allow the elongate member to be wound upon the rotatable member whilst remaining in association with the tail elongate member.
18. An arrangement as claimed in any preceding claim wherein the arrangement includes at least one coupling centrally located within the arrangement for direct supply at the arrangement location in addition to through the elongate member.
19. An arrangement as claimed in claim 18 wherein the rotary contacts are in association with three pins in order to provide an electrical coupling thereacross.
20. An arrangement as in claim 1 and any claim dependant thereon wherein the support means comprises a base to stably present the arrangement in use.
21. An arrangement as claimed in claim 20 wherein the base includes a hole within which a pin is located and supported, the reel arrangement is mounted upon the pin.

22. An arrangement as claimed in any preceding claim wherein the arrangement includes a tubular frame fixed together at a bottom end by a bar drilled to accept the frame, the bar and tubing in the frame drilled and screwed together to provide a fixed structure.

23. An arrangement as claimed in claim 22 when dependent upon claim 21 wherein the bar includes a hole threaded to accept the pin.

24. An arrangement as claimed in claim 23 wherein the pin when held within the hole in the base is associated with a locating part held against a bias in order to engage a groove within the pin.

25. An arrangement as claimed in any preceding claim wherein the arrangement includes a shaped guide with an eye through which the elongate member extends such that the reel arrangement can swivel towards a direction that the main elongate member is pulled.

26. An arrangement as claimed in claim 25 wherein the guide is configured to facilitate distribution of the elongate member about the rotatable member.

27. An arrangement as claimed in claim 22 and any claim dependant thereon wherein the pin can be utilised to support the reel arrangement in a socket located at a ground location or upon a bracket mounted on a wall for storage purposes.

28. An arrangement as claimed in any preceding claim wherein the reel arrangement can be secured to a trolley arrangement.

29. An arrangement as claimed in claim 28 wherein the trolley arrangement allows when the drive means is operated in order to wind the elongate member onto the rotatable member movement of the reel arrangement.

30. An arrangement as claimed in any preceding claim wherein electrical power is provided to the electrical motor through mains electricity directly or

through the elongate member or by connection to a battery or separate electricity generator.

31. An arrangement as claimed in any preceding claim wherein a handle is provided to facilitate directional steer of the main elongate member onto the rotatable member as it is rewound.

32. An arrangement as claimed in any preceding claim wherein the main elongate member is a hose.

33. An arrangement as claimed in claim 2 and any claim dependant thereon wherein the main elongate member and the tail elongate member are connected together by a coupling located at the centre of the rotatable member to allow the main elongate member to rotate with the rotatable member.

34. An arrangement as claimed in any preceding claim wherein a safety device is associated with the drive means to isolate the electrical supply to the socket when required.

35. An arrangement as claimed in claim 34 wherein the safety device comprises a switch to switch off the electrical supply when required and comprises a rocker switch mounted in a box with a hole to one side such that the length of an adult finger is required to activate the switch.

36. An arrangement as claimed in claim 35 wherein a knob is mounted on a spring operated rod fixed such that when the knob is pressed it operates the rocker switch and places it in an off position.

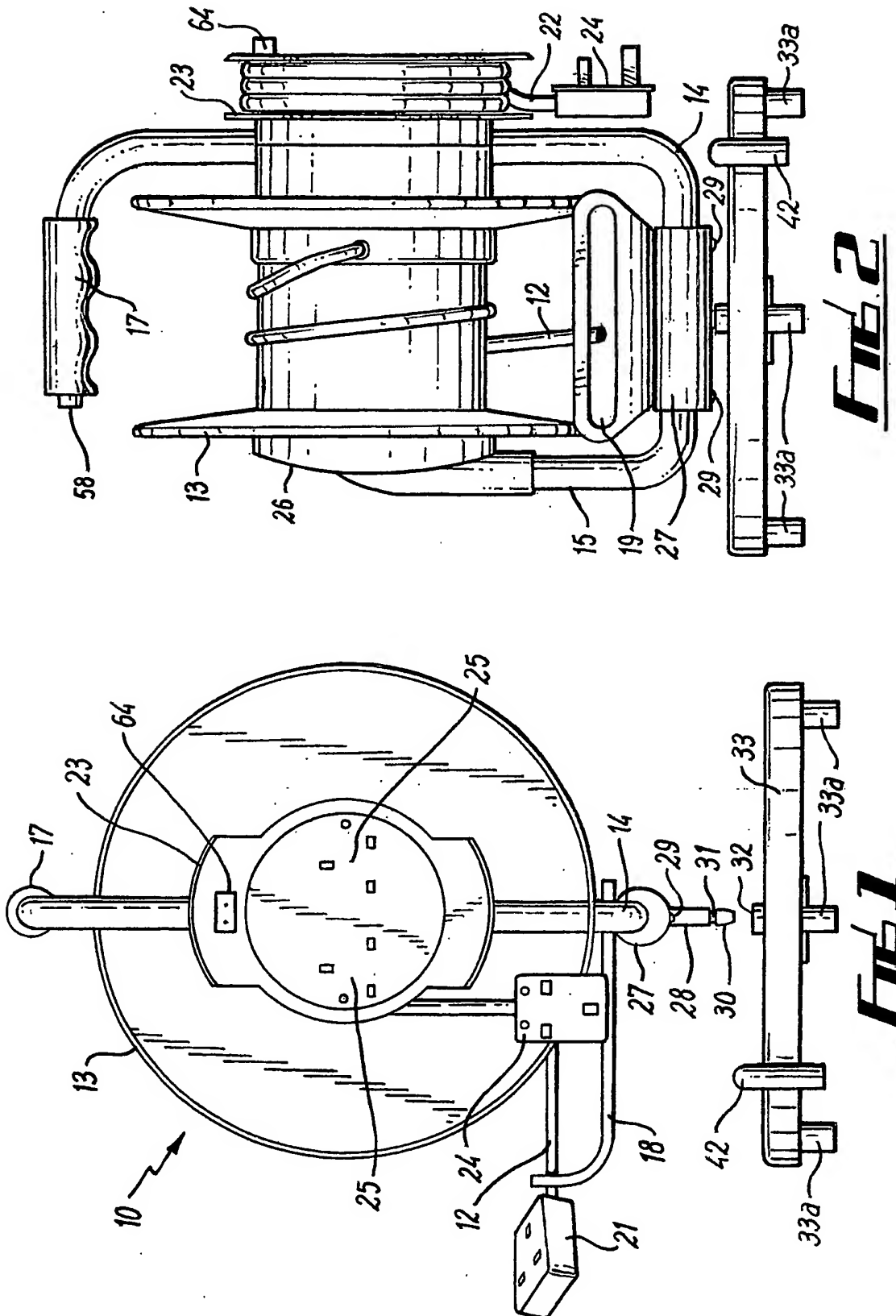
37. A reel arrangement comprising a rotatable member upon which a main elongate member can be wound and unwound, a tail elongate member secured to the arrangement to allow limited movement of the arrangement in use from a power source and connected to electrical power coupling means incorporated in the reel arrangement whereby the acceptable value of electrical power that can be supplied to the power coupling means is not limited by the extent to

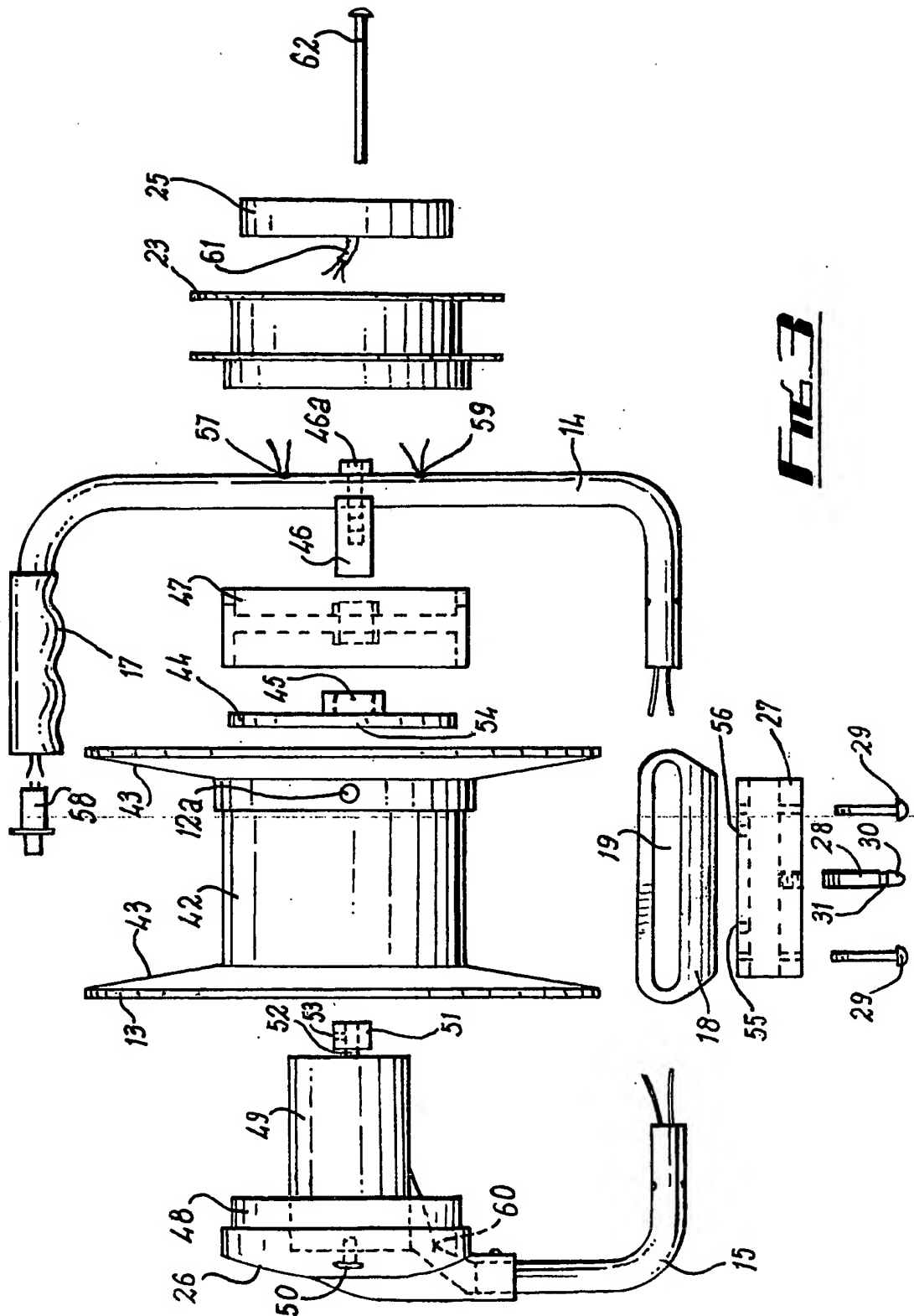
which the main elongate member is wound or unwound upon the rotatable member.

38. A reel arrangement substantially as hereinbefore described with reference to the accompanying drawings 1 to 13.

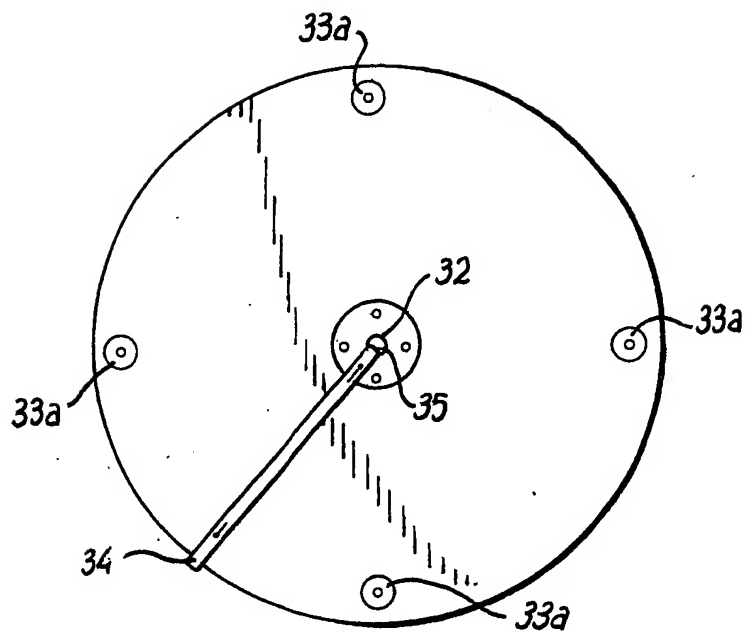
39. A reel arrangement substantially as hereinbefore described with reference to Figs. 14 to 16.

40. Any novel subject matter or combination including novel subject matter disclosed herein, whether or not within the scope of or relating to the same invention as any of the preceding claims.

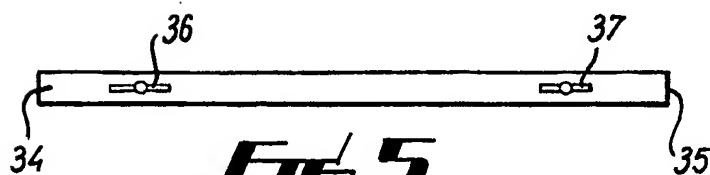




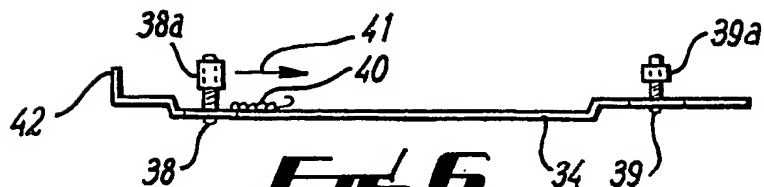




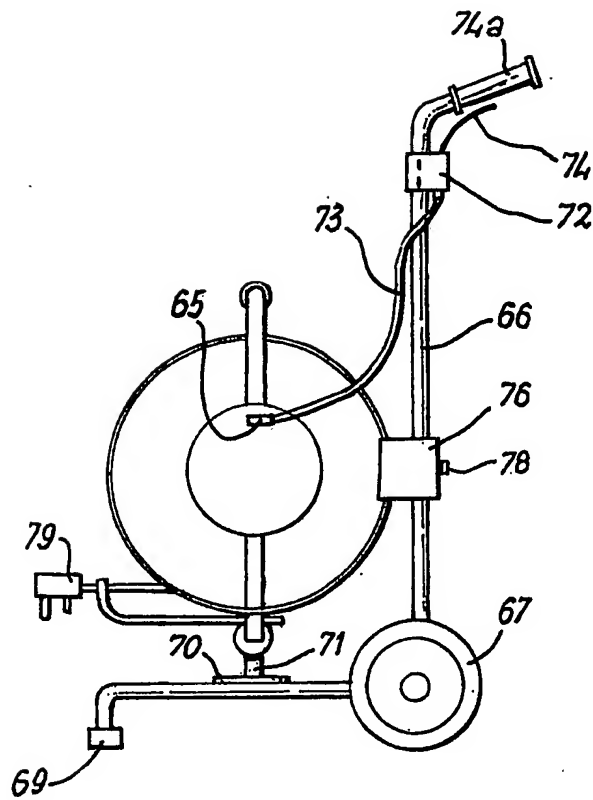
**FIG. 4**



**FIG. 5**

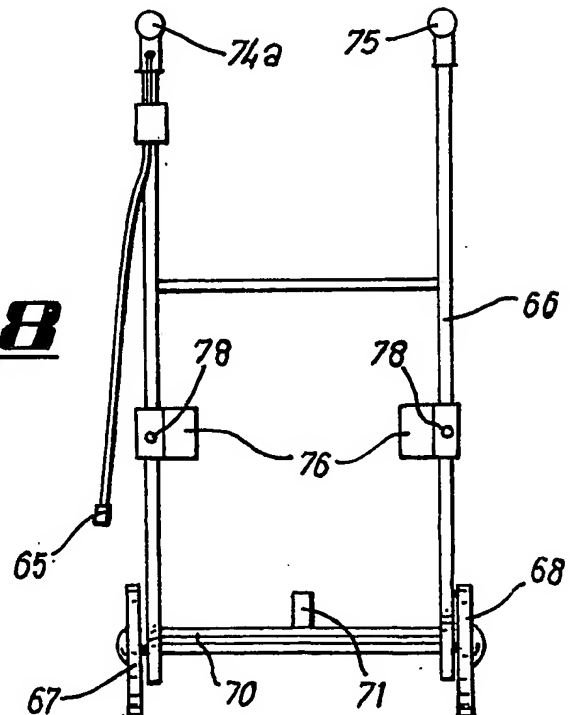


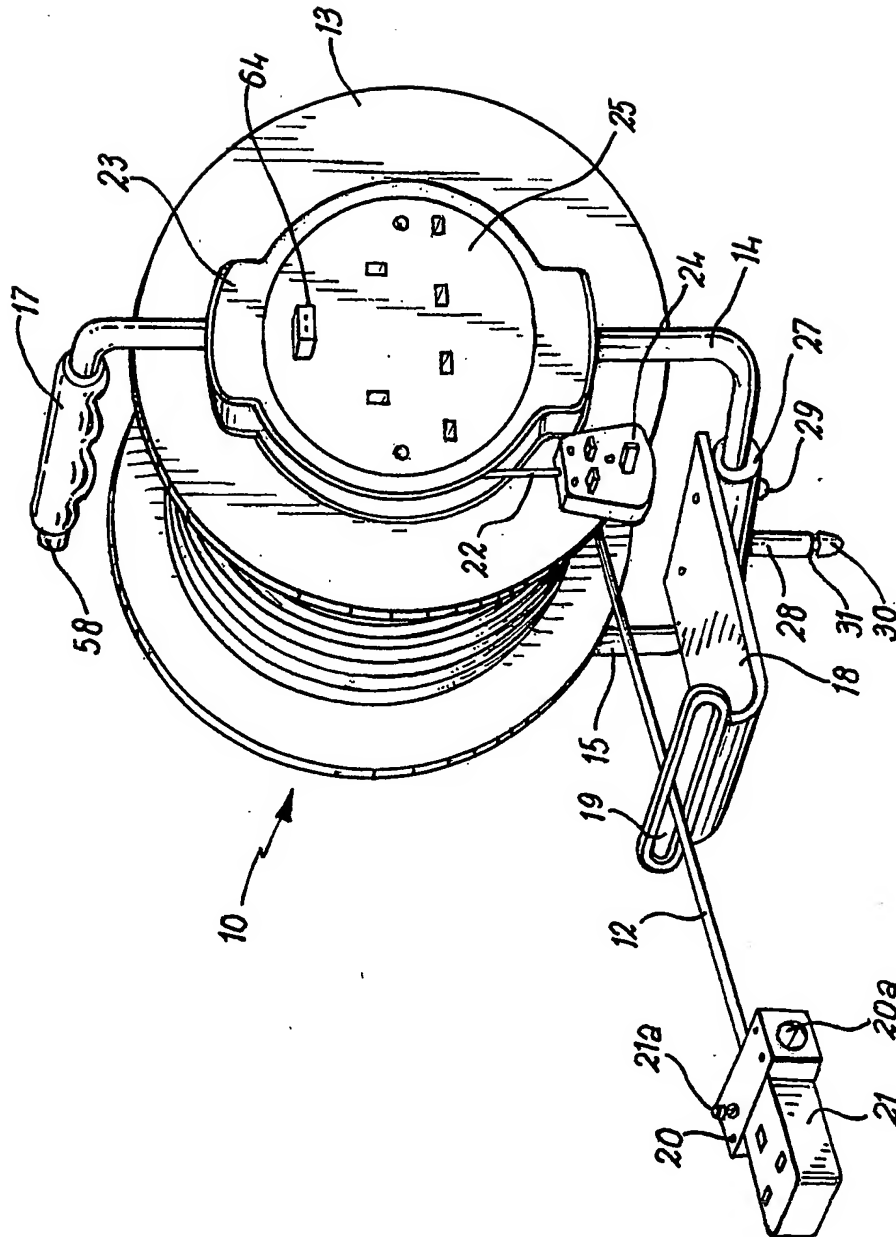
**FIG. 6**



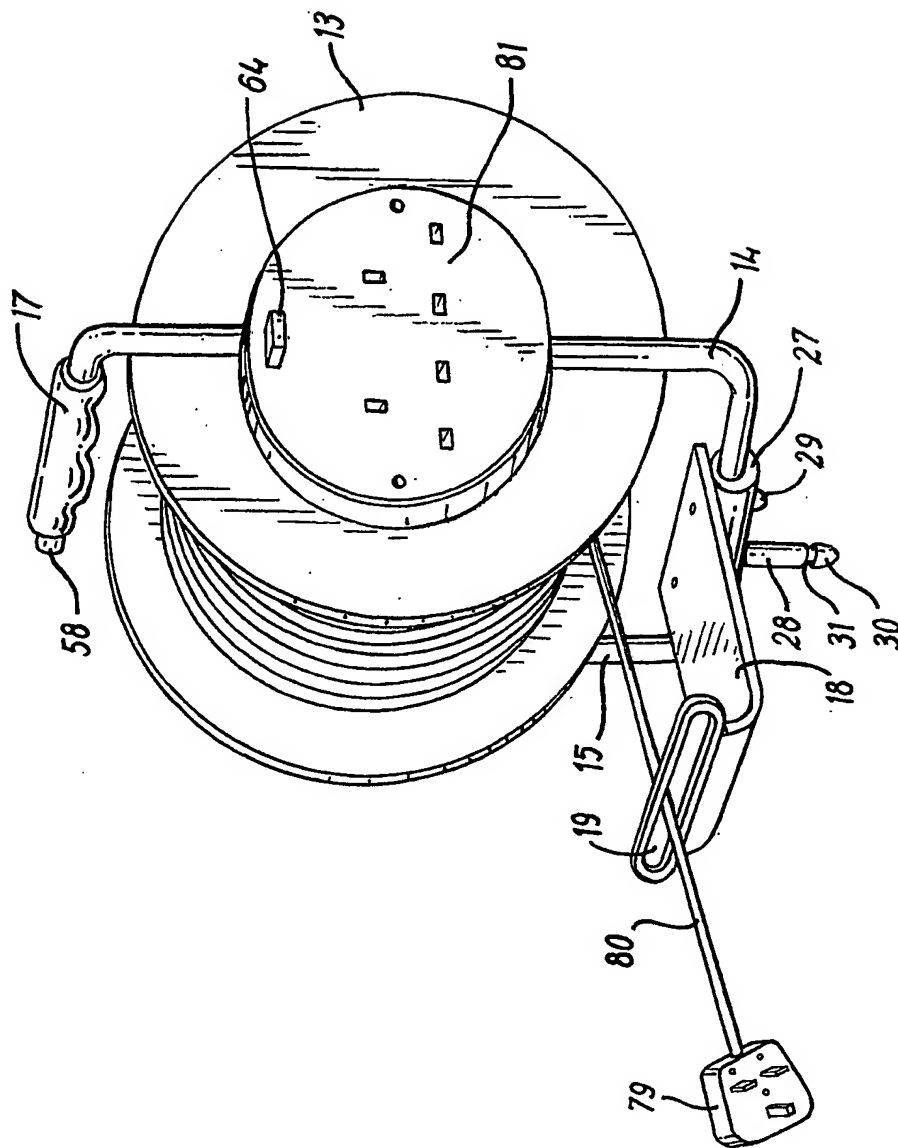
***FIG. 7***

***FIG. 8***

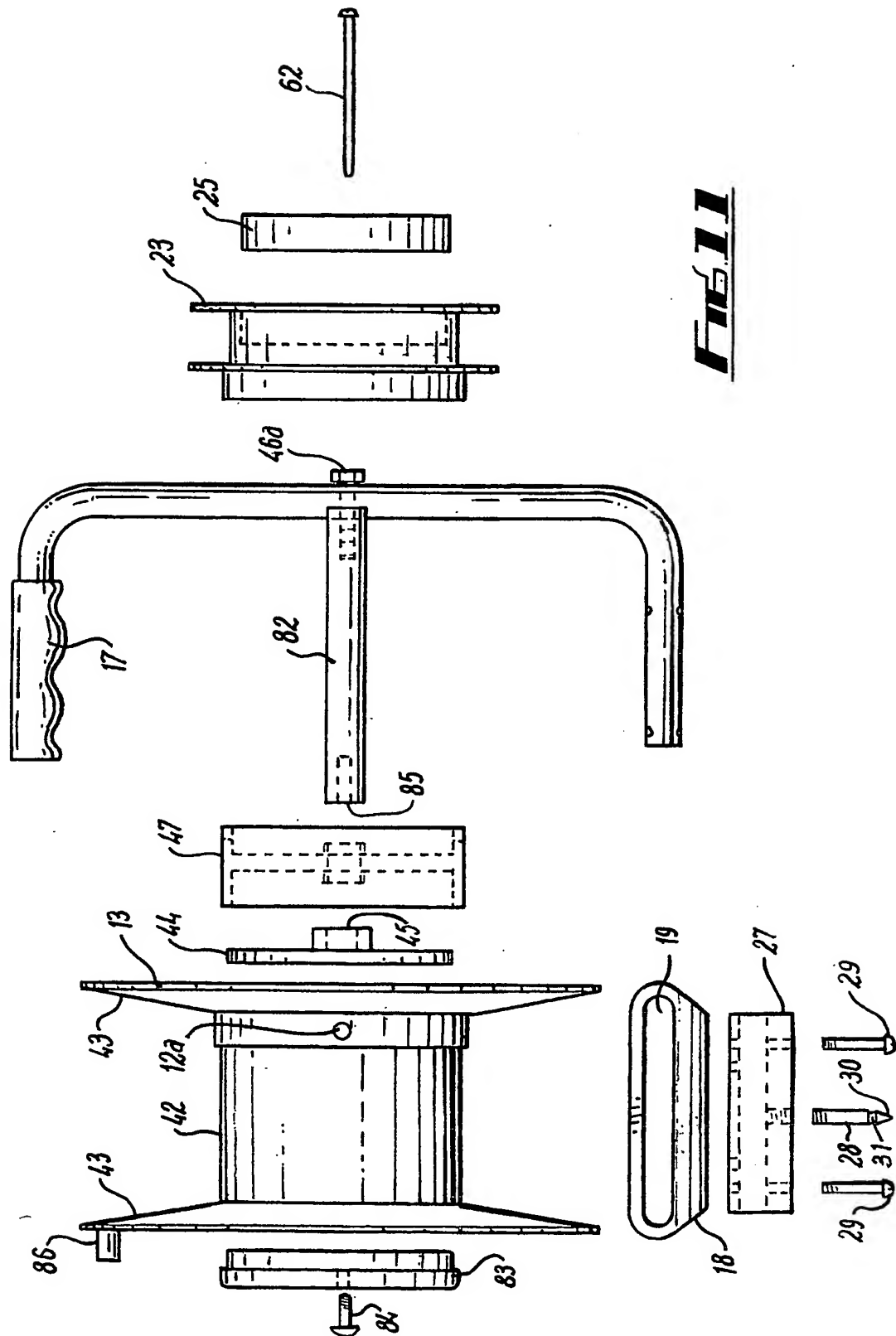




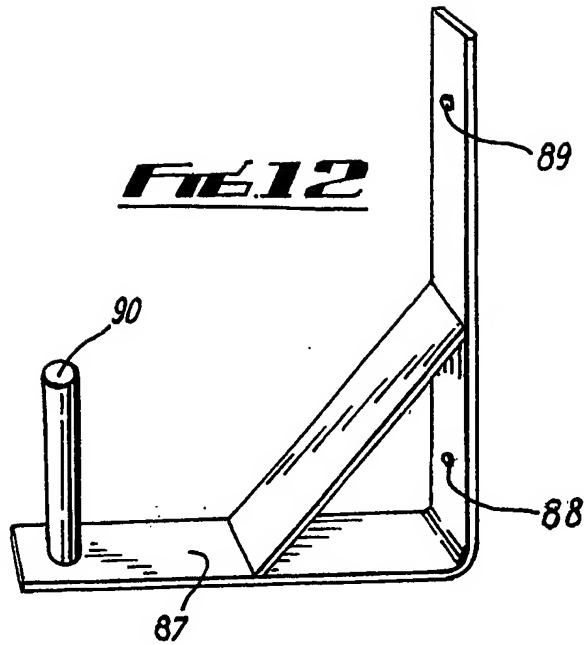
**Fig. 3**



**FIG 10**

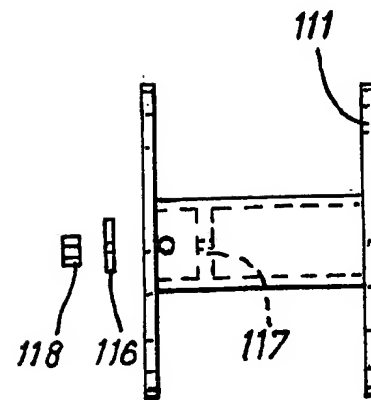
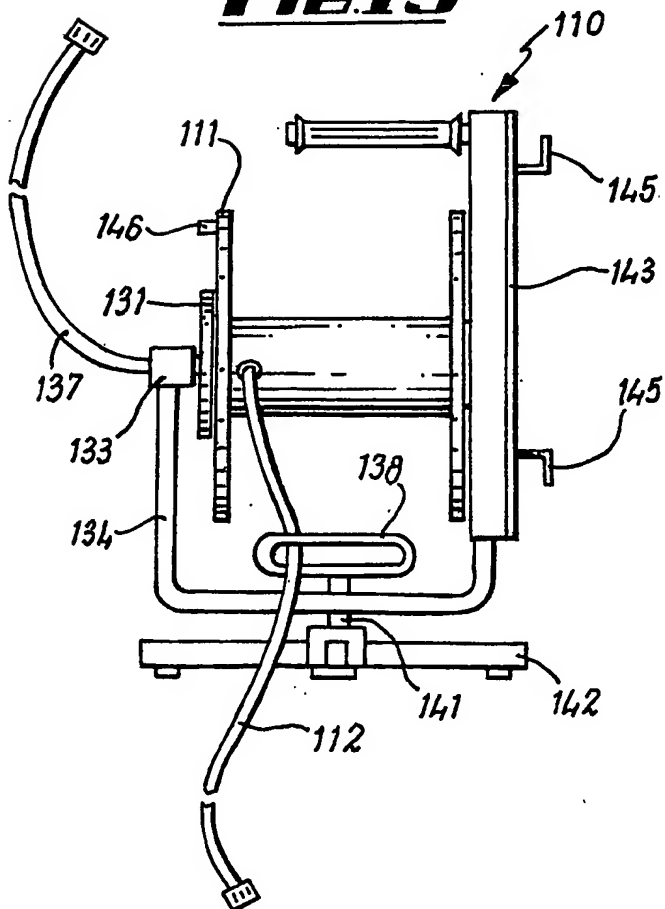


**FIG. 12**



**FIG. 13**

**FIG. 15**



**FIG. 16**

